

General

Guideline Title

Managing oral hydration. In: Evidence-based geriatric nursing protocols for best practice.

Bibliographic Source(s)

Mentes JC. Managing oral hydration. In: Boltz M, Capezuti E, Fulmer T, Zwicker D, editor(s). Evidence-based geriatric nursing protocols for best practice. 4th ed. New York (NY): Springer Publishing Company; 2012. p. 419-38.

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: Mentes JC. Managing oral hydration. In: Capezuti E, Zwicker D, Mezey M, Fulmer T, editor(s). Evidence-based geriatric nursing protocols for best practice. 3rd ed. New York (NY): Springer Publishing Company; 2008. p. 369-90.

Recommendations

Major Recommendations

Levels of evidence (I–VI) are defined at the end of the "Major Recommendations" field.

Parameters of Assessment (Mentes & Iowa-Veterans Affairs Nursing Research Consortium [IVANRC], 2000 [Level I])

- Health history
 - Specific disease states: dementia, congestive heart failure, chronic renal disease, malnutrition, and psychiatric disorders such as depression (Albert et al., 1989 [Level III]; Gaspar, 1988 [Level IV]; Warren et al., 1994 [Level IV])
 - Presence of comorbidities: more than four chronic health conditions (Lavizzo-Mourey, Johnson, & Stolley, 1988 [Level IV])
 - Prescription drugs: number and types (Lavizzo-Mourey, Johnson, & Stolley, 1988 [Level IV])
 - Past history of dehydration, repeated infections (Mentes, 2006 [Level IV])
- Physical assessments (Mentes & IVANRC, 2000 [Level I])
 - Vital signs
 - Height and weight
 - Body mass index (BMI) (Vivanti et al., 2008 [Level IV])
 - Review of systems
 - Indicators of hydration
- Laboratory tests
 - Urine-specific gravity (Mentes, 2006 [Level IV]; Wakefield et al., 2002 [Level IV])
 - Urine color (Mentes, 2006 [Level IV]; Wakefield et al., 2002 [Level IV])

- Blood urea nitrogen (BUN)/creatinine ratio
- Serum sodium
- Serum osmolality
- Salivary osmolality
- Individual fluid intake behaviors (Mentes, 2006 [Level IV])

Nursing Care Strategies

Risk Identification (Mentes & IVANRC, 2000 [Level I])

- Identify acute situations: vomiting, diarrhea, or febrile episodes
- Use a tool to evaluate risk: Dehydration Risk Appraisal Checklist

Acute Hydration Management

- Monitor input and output (Weinberg et al., 1994 [Level I]).
- Provide additional fluids as tolerated (Weinberg et al., 1994 [Level I]).
- Minimize fasting times for diagnostic and surgical procedures (American Society of Anesthesiologists, 1999 [Level I]).

Ongoing Hydration Management

- Calculate a daily fluid goal (Mentes & IVANRC, 2000 [Level I]).
- Compare current intake to fluid goal (Mentes & IVANRC, 2000 [Level I]).
- Provide fluids consistently throughout the day (Ferry, 2005 [Level VI]; Simmons, Alessi, & Schnelle, 2001 [Level II]).
- Plan for at-risk individuals
 - Fluid rounds (Robinson & Rosher, 2002 [Level IV]).
 - Provide two 8-oz. glasses of fluid, one in the morning and the other in the evening (Robinson & Rosher, 2002 [Level IV]).
 - "Happy hours" to promote increased intake (Musson et al., 1990 [Level V]).
 - "Tea time" to increase fluid intake (Mueller & Boisen, 1989 [Level V]).
 - Offer a variety of fluids throughout the day (Simmons, Alessi, & Schnelle, 2001 [Level II]).
- Fluid regulation and documentation
 - Teach able individuals to use a urine color chart to monitor hydration status (Armstrong et al., 1994 [Level IV]; Armstrong et al., 1998 [Level IV]; Mentes, 2006 [Level IV]).
 - Document a complete intake recording including hydration habits (Mentes & IVANRC, 2000 [Level I]).
 - Know volumes of fluid containers to accurately calculate fluid consumption (Burns, 1992 [Level IV]; Hart & Adamek, 1984 [Level III]).

Follow-up Monitoring of Condition

- Urine color chart monitoring in patients with better renal function (Armstrong et al., 1994 [Level IV]; Armstrong et al., 1998 [Level IV]; Wakefield et al., 2002 [Level IV]).
- Urine specific-gravity checks (Armstrong et al., 1994 [Level IV]; Armstrong et al., 1998 [Level IV]; Wakefield et al., 2002 [Level IV]).
- 24-hour intake recording (Metheny, 2000 [Level VI]).

Definitions:

Levels of Evidence

Level I: Systematic reviews (integrative/meta-analyses/clinical practice guidelines based on systematic reviews)

Level II: Single experimental study (randomized controlled trials [RCTs])

Level III: Quasi-experimental studies

Level IV: Non-experimental studies

Level V: Care report/program evaluation/narrative literature reviews

Level VI: Opinions of respected authorities/consensus panels

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

- Dehydration
- Underhydration

Guideline Category

Evaluation

Management

Prevention

Risk Assessment

Clinical Specialty

Family Practice

Geriatrics

Internal Medicine

Nursing

Intended Users

Advanced Practice Nurses

Allied Health Personnel

Health Care Providers

Hospitals

Nurses

Physician Assistants

Physicians

Guideline Objective(s)

To provide a standard of practice protocol to minimize episodes of dehydration in older adults

Target Population

Older adults

Interventions and Practices Considered

Assessment/Evaluation

1. Health history
2. Physical assessments
3. Laboratory tests
4. Assessment of fluid intake behavior
5. Risk identification: Dehydration Risk Appraisal Checklist

Management

1. Acute hydration management
2. Ongoing hydration management
3. Follow-up monitoring

Major Outcomes Considered

- Dehydration
- Urinary tract infections
- Urinary incontinence
- Urinary pH
- Constipation
- Acute confusion

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

Although the Appraisal of Guidelines for Research and Evaluation (AGREE) instrument (described in Chapter 1 of the original guideline document, *Evidence-based Geriatric Nursing Protocols for Best Practice*, 4th ed.) was created to critically appraise clinical practice guidelines, the process and criteria can also be applied to the development and evaluation of clinical practice protocols. Thus, the AGREE instrument has been expanded (i.e., AGREE II) for that purpose to standardize the creation and revision of the geriatric nursing practice guidelines.

The Search for Evidence Process

Locating the best evidence in the published research is dependent on framing a focused, searchable clinical question. The PICO format—an acronym for population, intervention (or occurrence or risk factor), comparison (or control), and outcome—can frame an effective literature search. The editors enlisted the assistance of the New York University Health Sciences librarian to ensure a standardized and efficient approach to collecting evidence on clinical topics. A literature search was conducted to find the best available evidence for each clinical question addressed. The results were rated for level of evidence and sent to the respective chapter author(s) to provide possible substantiation for the nursing practice

protocol being developed.

In addition to rating each literature citation as to its level of evidence, each citation was given a general classification, coded as "Risks," "Assessment," "Prevention," "Management," "Evaluation/Follow-up," or "Comprehensive." The citations were organized in a searchable database for later retrieval and output to chapter authors. All authors had to review the evidence and decide on its quality and relevance for inclusion in their chapter or protocol. They had the option, of course, to reject or not use the evidence provided as a result of the search or to dispute the applied level of evidence.

Developing a Search Strategy

Development of a search strategy to capture best evidence begins with database selection and translation of search terms into the controlled vocabulary of the database, if possible. In descending order of importance, the three major databases for finding the best primary evidence for most clinical nursing questions are the Cochrane Database of Systematic Reviews, Cumulative Index to Nursing and Allied Health Literature (CINAHL), and Medline or PubMed. In addition, the PsycINFO database was used to ensure capture of relevant evidence in the psychology and behavioral sciences literature for many of the topics. Synthesis sources such as UpToDate® and British Medical Journal (BMJ) Clinical Evidence and abstract journals such as *Evidence Based Nursing* supplemented the initial searches. Searching of other specialty databases may have to be warranted depending on the clinical question.

It bears noting that the database architecture can be exploited to limit the search to articles tagged with the publication type "meta-analysis" in Medline or "systematic review" in CINAHL. Filtering by standard age groups such as "65 and over" is another standard categorical limit for narrowing for relevance. A literature search retrieves the initial citations that begin to provide evidence. Appraisal of the initial literature retrieved may lead the searcher to other cited articles, triggering new ideas for expanding or narrowing the literature search with related descriptors or terms in the article abstract.

Number of Source Documents

Not stated

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Levels of Evidence

Level I: Systematic reviews (integrative/meta-analyses/clinical practice guidelines based on systematic reviews)

Level II: Single experimental study (randomized controlled trials [RCTs])

Level III: Quasi-experimental studies

Level IV: Non-experimental studies

Level V: Care report/program evaluation/narrative literature reviews

Level VI: Opinions of respected authorities/consensus panels

AGREE Next Steps Consortium (2009). Appraisal of guidelines for research & evaluation II. Retrieved from <http://www.agreetrust.org?o=1397>

Adapted from: Melnyck, B. M. & Fineout-Overholt, E. (2005). Evidence-based practice in nursing & health care: A guide to best practice. Philadelphia, PA: Lippincott Williams & Wilkins and Stetler, C.B., Morsi, D., Rucki, S., Broughton, S., Corrigan, B., Fitzgerald, J., et al. (1998). Utilization-focused integrative reviews in a nursing service. *Applied Nursing Research*, 11(4) 195-206.

Methods Used to Analyze the Evidence

Review of Published Meta-Analyses

Description of the Methods Used to Analyze the Evidence

Not stated

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

Not stated

Rating Scheme for the Strength of the Recommendations

Not applicable

Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

Method of Guideline Validation

External Peer Review

Internal Peer Review

Description of Method of Guideline Validation

Not stated

Evidence Supporting the Recommendations

References Supporting the Recommendations

Albert SG, Nakra BR, Grossberg GT, Caminal ER. Vasopressin response to dehydration in Alzheimer's disease. J Am Geriatr Soc. 1989 Sep;37(9):843-7. [PubMed](#)

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Metheny N. Fluid and electrolyte balance. In: *Nursing considerations*. 4th ed. St. Louis (MO): Lippincott, Williams, & Wilkins; 2000. p. 3-12,24-6.

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Musson ND, Kincaid J, Ryan P, Glusman B, Varone L, Gamarra N, Wilson R, Reece W, Silverman M. Nature, nurture, nutrition: interdisciplinary programs to address the prevention of malnutrition and dehydration. *Dysphagia*. 1990;5(2):96-101. [PubMed](#)

Robinson SB, Rosher RB. Can a beverage cart help improve hydration. *Geriatr Nurs*. 2002 Jul-Aug;23(4):208-11. [PubMed](#)

Simmons SF, Alessi C, Schnelle JF. An intervention to increase fluid intake in nursing home residents: prompting and preference compliance. *J Am Geriatr Soc*. 2001 Jul;49(7):926-33. [PubMed](#)

Vivanti A, Harvey K, Ash S, Battistutta D. Clinical assessment of dehydration in older people admitted to hospital: what are the strongest indicators?. *Arch Gerontol Geriatr Suppl*. 2008 Nov-Dec;47(3):340-55. [PubMed](#)

Wakefield B, Mentes J, Diggelmann L, Culp K. Monitoring hydration status in elderly veterans. *West J Nurs Res*. 2002 Mar;24(2):132-42. [PubMed](#)

Warren JL, Bacon WE, Harris T, McBean AM, Foley DJ, Phillips C. The burden and outcomes associated with dehydration among US elderly, 1991. *Am J Public Health*. 1994 Aug;84(8):1265-9. [PubMed](#)

Weinberg AD, Pals JK, Levesque PG, Beal LF, Cunningham TJ, Minaker KL. Dehydration and death during febrile episodes in the nursing home. *J Am Geriatr Soc*. 1994 Sep;42(9):968-71. [PubMed](#)

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for selected recommendations (see the "Major Recommendations" field).

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

- Maintenance of body hydration
- Decreased infections, especially urinary tract infections
- Improvement in urinary incontinence
- Lowered urinary pH
- Decreased constipation
- Decreased acute confusion

Potential Harms

Not stated

Implementation of the Guideline

Description of Implementation Strategy

An implementation strategy was not provided.

Implementation Tools

Mobile Device Resources

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Staying Healthy

IOM Domain

Effectiveness

Patient-centeredness

Identifying Information and Availability

Bibliographic Source(s)

Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2008 (revised 2012)

Guideline Developer(s)

Hartford Institute for Geriatric Nursing - Academic Institution

Guideline Developer Comment

The guidelines were developed by a group of nursing experts from across the country as part of the Nurses Improving Care for Health System Elders (NICHE) project, under sponsorship of the Hartford Institute for Geriatric Nursing, New York University College of Nursing.

Source(s) of Funding

Hartford Institute for Geriatric Nursing

Guideline Committee

Not stated

Composition of Group That Authored the Guideline

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Financial Disclosures/Conflicts of Interest

Not stated

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Guideline Availability

Electronic copies: Available from the [Hartford Institute for Geriatric Nursing Web site](#) .

Copies of the book *Evidence-Based Geriatric Nursing Protocols for Best Practice*, 4th edition: Available from Springer Publishing Company, 536 Broadway, New York, NY 10012; Phone: (212) 431-4370; Fax: (212) 941-7842; Web: www.springerpub.com .

Availability of Companion Documents

The ConsultGeriRN app for mobile devices is available from the [Hartford Institute for Geriatric Nursing Web site](#) .

Patient Resources

None available

NGC Status

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